ENR-1000 Series

User's Manual

For V4.00.02 Firmware

Legal Notice

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Regulatory Compliance Information

Federal Communications Commission Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

WARNING: Changes or modifications to the equipment that are not expressly approved by the responsible party for compliance could void the user's authority to operate the equipment.

European Community Compliance Statement

This product has been tested and found to comply with the limits for Class B Information Technology Equipment according to European Standard EN 55022 and EN 55024. In a domestic environment, this product may cause radio interference in which cause the user be require to take adequate measures.

About This Manual

Target Audience

This manual is intended for **End Users** who actually execute security tasks such as monitoring ongoing activities in the building, patrolling secured zones, searching video data and managing alarms with use of ENR surveillance system. The reader is expected to own not only the basic operation skills but permissions to access major functionalities defined by the **System Administrator**.

You may also check the product page for updates and documents.
http://www.acti.com/product/category/Standalone_NVR

Technical Support

If you have any questions during system installation, please feel free to contact our engineers via our **Customer Help Desk** platform http://www.acti.com/CHD.

Remarks

1. The screenshots appearing in this manual are taken from local display UI.
2. Differences in web client and local display UI should be expected but all functions are the same.

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Introduction

Product Overview

ACTi ENR-1000 Series (hereafter referred to as ENR) is a compact and reliable multi-channel standalone NVR. It features a stable embedded Linux operating system and capabilities of supporting mega-pixel resolution H.264 streaming, an HDMI output for local display, PTZ control, scheduled / event-triggered / event speed-up recording, event management, synchronized playback, time / event-based playback search and video bookmarks. Its smart Setup Wizard and intuitive user interface allow the system installer to enjoy effortless installation experience, while making it easy for new users to get acquainted with the operation by first-time use. Other than the local client, the remote PC client may access the ENR system simultaneously, and experience user-friendly web interface customized for browser-based operations.

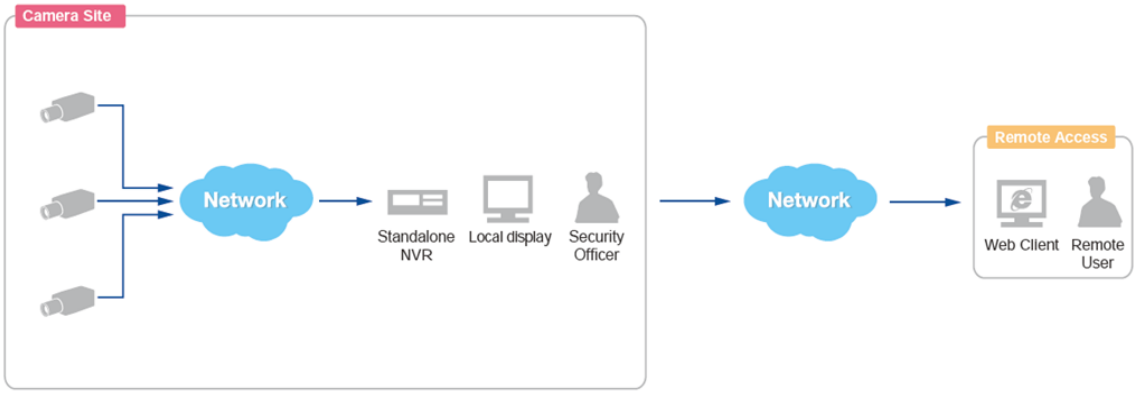
ENR Server / Client Architecture

In a video surveillance system architecture, **ENR** serves as service provider, aimed to run 24/7 non-stop a video management service for clients. An **ENR Client** makes requests for monitoring video streams or playing back recordings of **ENR**.

There are two types of **ENR** clients: **Local Client** and **Remote Client**. A client, connecting from whether a remote computer or from local, will be offered the same functionalities of ENR.

- **Local Client**: In the local site, the client user directly operates **ENR** by connecting an HDMI monitor and a USB mouse to the physical **ENR**.

- **Remote Client**: Over the TCP/IP network, the **Remote Client** communicates with **ENR** through HTTP Protocol. This client user will have to use a computer with Internet Explorer to access the **ENR** web interface, without the need of installing any client program beforehand. Logging in to **ENR** is as simple as visiting a website.



Remote User: Administrator / Supervisor / Manager / Security Officer

Display Video Performance

On a **Live** or **Playback** screen, ENR handles displayed video differently based on the combination of the following factors, which you should put into consideration when configuring your view layout:

(1) The number of channels of your current layout

(2) The format of video stream, e.g. resolution and frame rate.

To balance the loading of the system, ENR will **decode only I frames** (*1) for viewing when CPU usage is critical. The video stream is still recorded at its original frame rate no matter at what quality it is displayed.

To acquire good video display quality, however, it is suggested that you try to use the layout containing **just enough** channels, or make use of **Sequence Patrol** function.

Local Live View / Playback

On local view display, ENR determines when to enter Decode-I mode according to these key references – (1) your selection of "**Layout**" and (2) the **Video Resolution**. A layout consisting of more channels and high-resolution streams are considered more CPU consuming, which is more likely to trigger Decode-I mode. Take ENR-1100 for example, by switching the live screen layout from **4x4** style (**16** channels) to **Quad** style (**4** channels), the video will appear much smoother.

On a local Live or Playback screen, the conditions below ensures the live streaming to be displayed at a smooth quality(12~30 FPS); otherwise, ENR will decode only I-frames for each channel.

Model	Layout Style	Video Resolution
ENR-1000	1, 2, 4	Not higher than **1920** x **1080** pixels
ENR-1100	1, 2, 4, 1+5, 2+4, 1+7, 9	
ENR-1200 (*2)	1, 2, 4, 1+5, 2+4, 1+7	Not higher than **1280** x **720** pixels (*3)

(*1) A video sequence is composed of a series of **GOP** (Group of Pictures). Among these pictures, **I-frame** (Intra-coded picture) is a fully specified picture with complete image information, while P-frame and B-frame hold only partial image information.

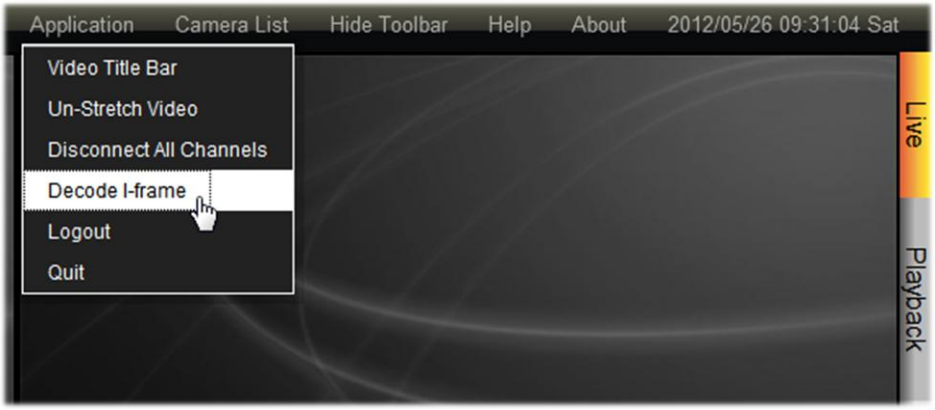
(*2) ENR-1200 will automatically turn all channels into Decode-I Mode when the number of layout channels is more than **8**.

(*3) ENR-1200 will automatically turn a channel into Decode-I Mode when its video resolution is above **1280** x **720** pixels.

Remote Live View

Aside from user's behaviors, the hardware specifications of each remote client computer will affect the Live View display quality. ENR system will observe the outcome of all the variables (such as dynamic CPU loading) to make adaptations.

For Live View display, you may select a desired display mode to suit your system condition. On remote Live screen interface, click "**Application**" and select "**Decode I-frame**" or "**Auto Drop Frame**".



Adopt **Decode I-frame** mode or **Auto Drop Frame** mode based on your client PC condition:

Condition	Decode I mode	Auto Drop Frame Mode (Default)
Scenario	The client PC is with basic-level hardware	The client PC is with advanced-level hardware or dedicated for displaying ENR Live screen
Purpose	Saving as much CPU usage as possible for other tasks operated on this PC	Displaying as many video frames as possible to achieve smooth video performance.
Display Rule	Decodes I frame only	Whenever the CPU loading exceeds **80%**, random channels will start to decode I frame for about 15 seconds, and then return to original frame rate later. This process will continue until ●The CPU loading drops under **80%** ●User switches to another layout or page

Remote Playback

Up to **4**-channel synchronized playback is allowed on a remote client's screen.

Supported Video Format

As 1080p HDMI monitors have become the most extensive products used in various applications, ENR is designed to conform to this display standard with its capability of outputting 1080p video stream. Therefore, to reserve as much computing power for ENR unit as possible, only up to two-megapixel H.264 video stream can be displayed on **local** Live screen and Playback screen.

With a client computer, you may still acquire full support for displaying these types of video codec – MPEG4, MJPEG and H.264, and up to five- megapixel video resolution from web client interface; also, the video stream is recorded at your desired format regardless of the format of local live stream.

	Camera Management Export / Recording	Local Live View / Playback	Remote Live View / Playback
Codec	MPEG4 MJPEG H.264 (*1)	H.264 (*2)	MPEG4 MJPEG H.264
Resolution	Up to **2592** x **1944** pixels	Up to **1920** x **1080** pixels (*3)	Up to **2592** x **1944** pixels

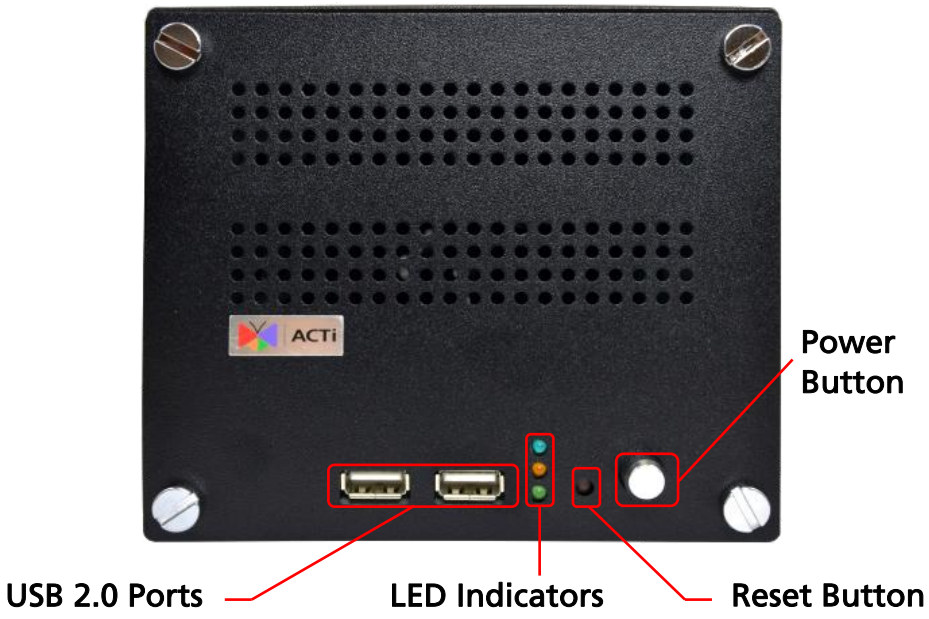
*1 ENR's "**Auto Add**" function will only add H.264 video stream.

*2 H.264 is the only displayable codec for local live view and playback. The channels using other codec will appear blank, although the recording is proceeding normally.

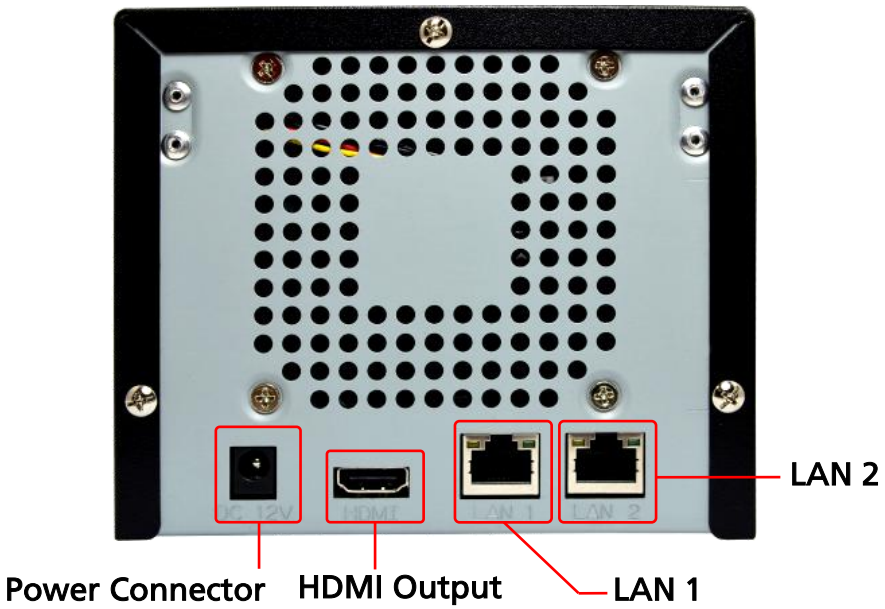
*3 ENR local live view and playback supports only the display of two-megapixel or below resolution video. The channels using higher resolution video stream will appear blank, although the recording is proceeding normally.

At A Glance

Front Panel



Rear Panel



Power Button & Reset Button

You can turn on/turn off the device with **Power Button**; with **Reset Button**, you may restore the device to factory default settings.

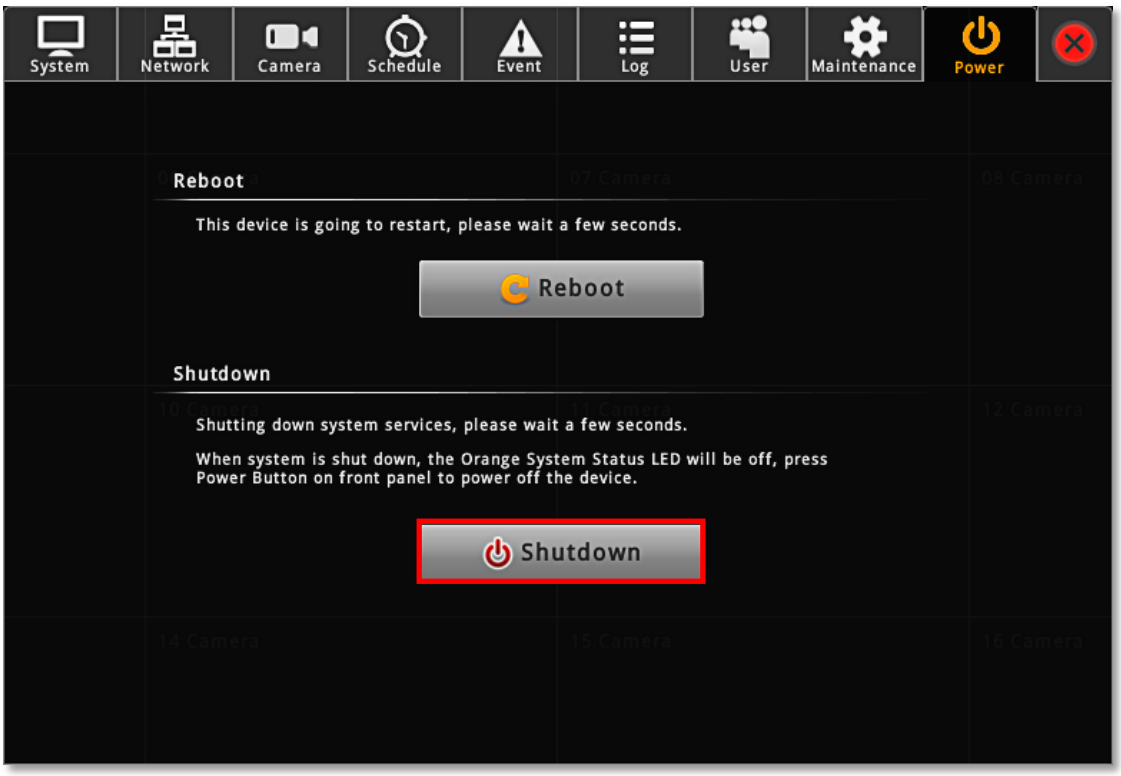
Turn On the Device

Press down the **Power Button** and release, the **Power LED** will light up and turn solid blue.

Turn Off the Device

As the device is powered on, the **Power LED** and **System LED** are both lit, and the **Power Button** is in pressed state. To turn ENR off, please do the following:

1. On **Live View** screen, right-click to bring up **Live View Menu**, select **Setup Menu** → **Reboot / Shutdown** tab, and click "**Shutdown**".



2. The local display screen will turn black, with an information dialogue box showing up. Please observe the **System LED** on front panel, when its orange light is off, you may press the **Power Button** to completely shut down the device.

Reset to Factory Default

By resetting this device, all your system settings and system log will return to factory default. It is strongly recommended that you back up previous settings with **Backup** function and export the system logs before resetting to factory default.

1. To begin, please turn off the device first.
2. Press down the **Power Button** to boot up the device, and immediately press and hold the **Reset Button** with a pin or clip, the red System LED will light up for about 2~3 seconds, and you may release the **Reset Button** as the red light is off.

The device will enter the resetting process.

After the device automatically reboots, the resetting process is done and you may log in.

LED Indicators

The LED indicators on front panel show the current device status:

Item	Indicator Status	Color	Description
Power LED	Solid	Blue	The device power is on.
System Status LED	Lights up for three seconds after Reset Button is pressed	Red	The system resetting process is initializing.
	Solid		The system service is running.
HDD LED	Flashing	Green	The hard disk is recording.

Local Client Operation

Login & Logout

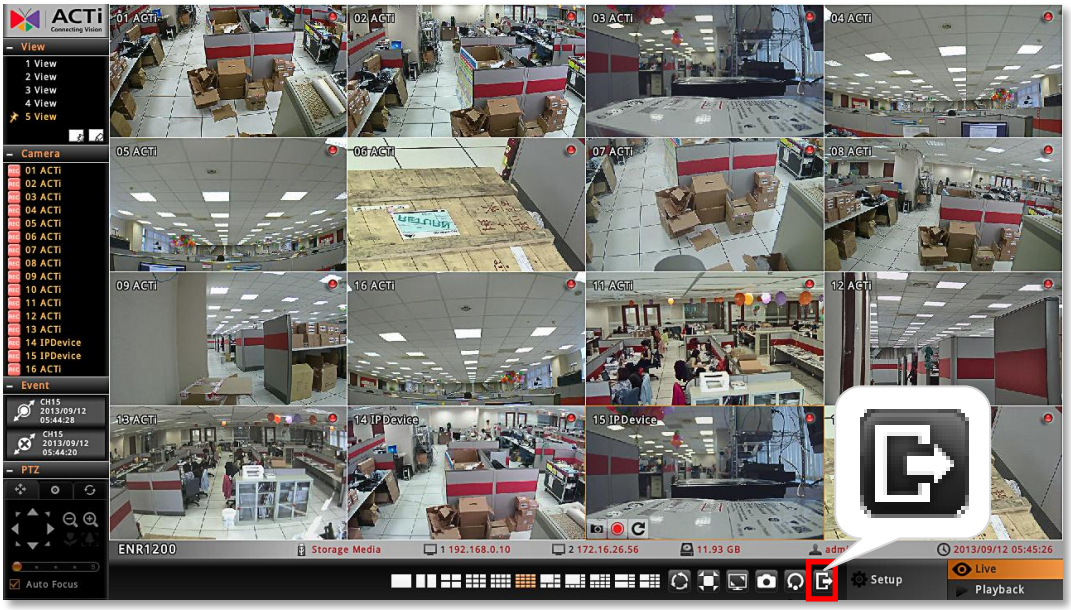
To log into ENR system for the first time, you will have to key in the account name and password in Login window. Please contact your system administrator for account and password information.

Login

On **Login** window, click into the **Account** and **Password** fields to enter your account information.

Logout

On **Live View** screen, click on the **Logout** button.



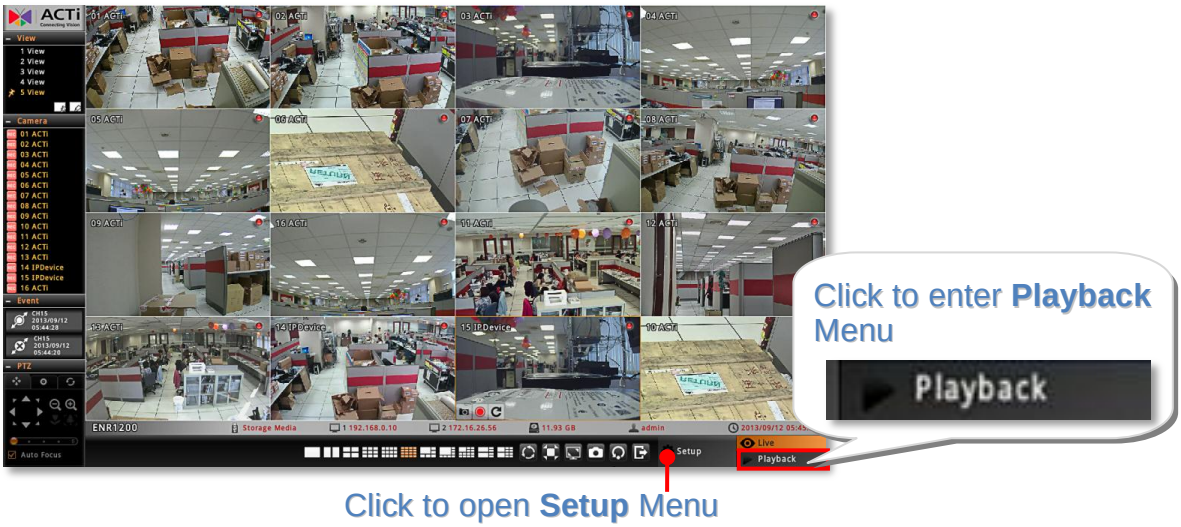
System Overview

Main Screen Introduction

ENR system has two main screens:

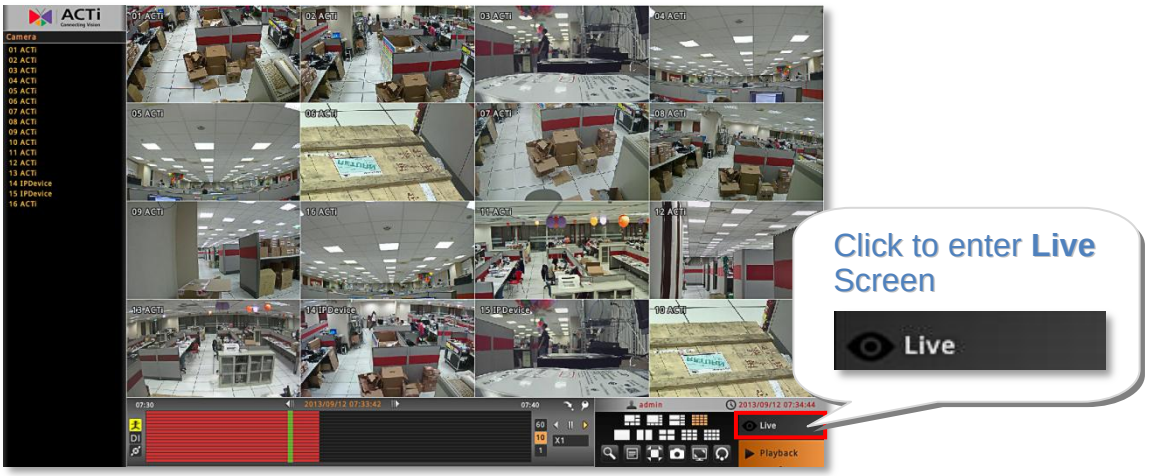
●**Live** screen

After logging in, you will enter **Live** screen. **Live** screen is the interface where you see the live views from your cameras. It is where most of the security professionals access the surveillance system.



●**Playback** screen

Where you can search the recordings, view the playback, put video bookmarks and export the video.

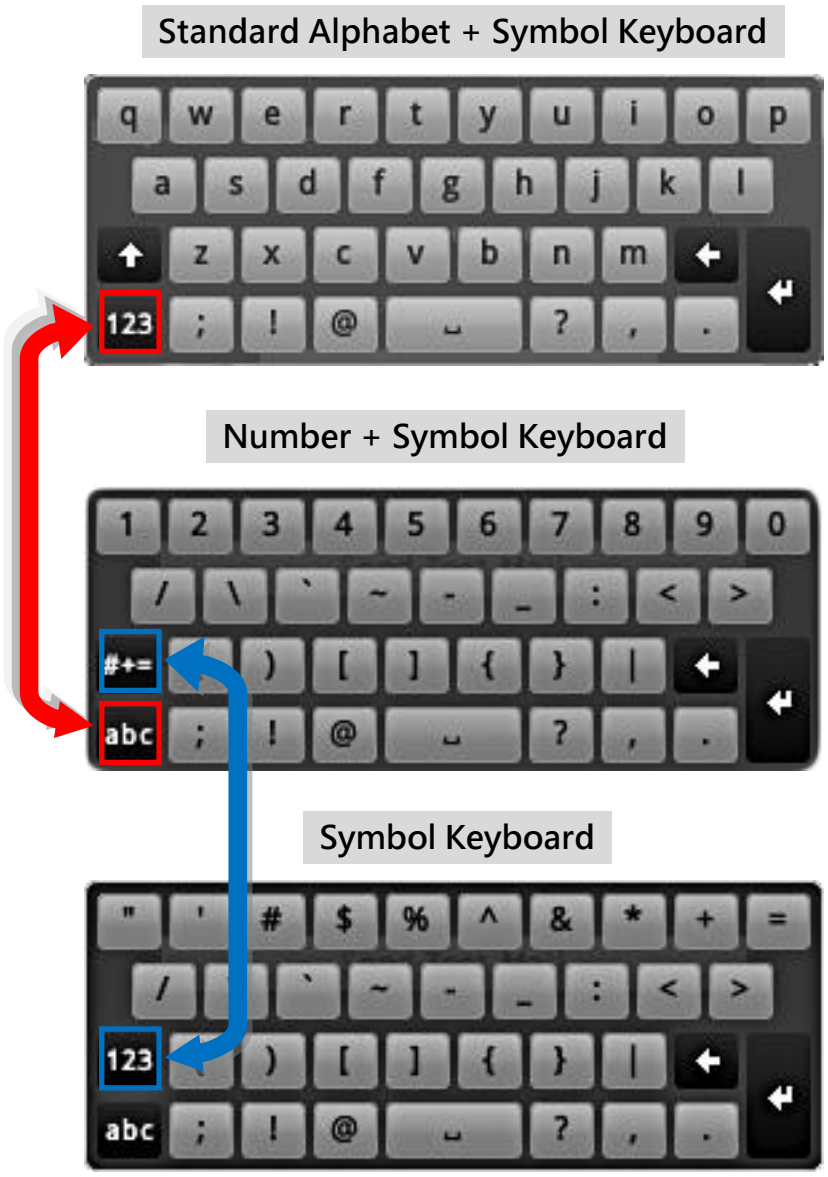


Input Devices

IN ENR system, a USB mouse is the required input device to do all the operations on user interface. All the input devices, including USB mouse and USB keyboard are ready to use when you connect them to ENR via USB 2.0 ports. You may adjust the mouse's cursor speed via the path below: On **Live** screen**,** click **Setup** → select **System** tab → click "**Mouse**" or "**Keyboard**".

Onscreen Keyboard

The onscreen keyboards allow you to input characters without using a physical one. By clicking in a character field (e.g. **Account** or **Server** name) or number field (e.g. **IP address** or **Port**), the specific onscreen keyboard will be brought up.



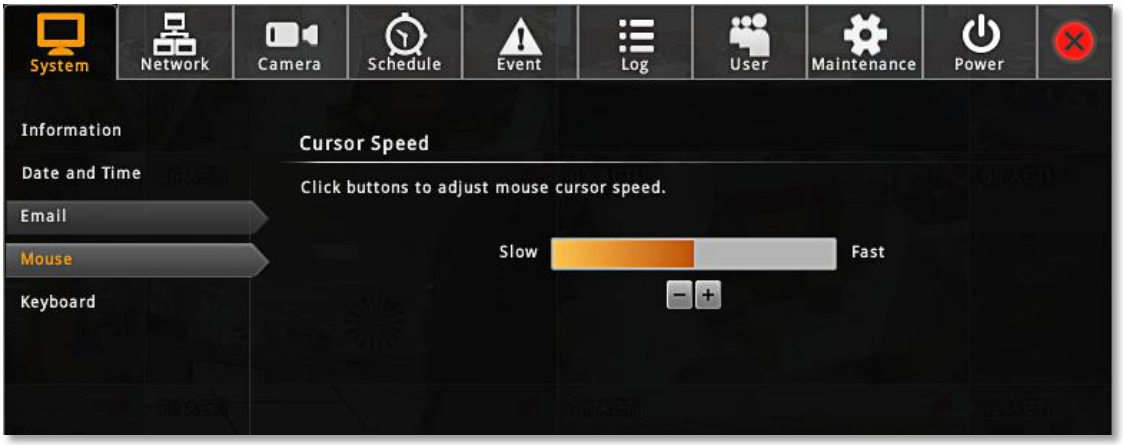
Onscreen Keyboard Settings

To disable the virtual keyboard if a physical one is already in use, on **Live** screen, click **Setup** → **System** tab → click "**Keyboard"**. Uncheck the box "**Always shows software keyboard**".

Mouse Settings

You may adjust the mouse's cursor speed via the path below:

On **Live** screen**,** click **Setup** → select **System** tab → click "**Mouse"**.

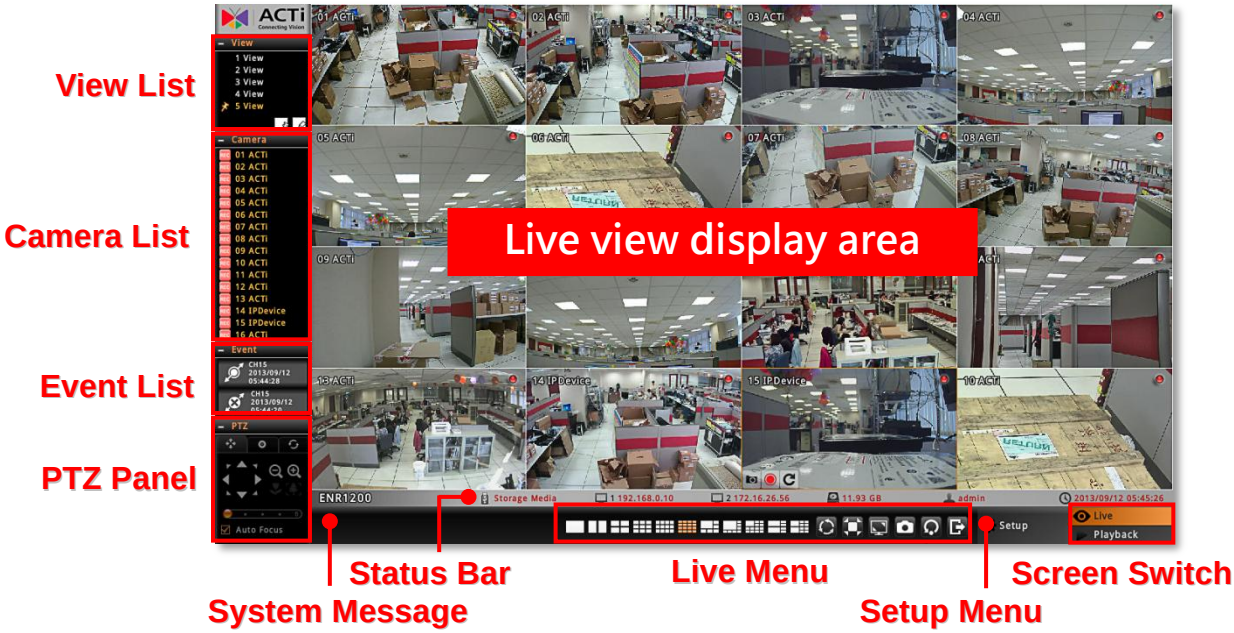


Monitoring

You can perform most live monitoring tasks on **Live** screen. ENR may display all live channels on the screen, or 1x1 single channel in succession automatically.

Aside from keeping an eye on the video, you may also take snapshots, control PTZ cameras, start or stop manual recording on a selected channel. In this section, you will be given instructions on the said fundamental operations. To start, log on to the system first.

Live Screen Overview

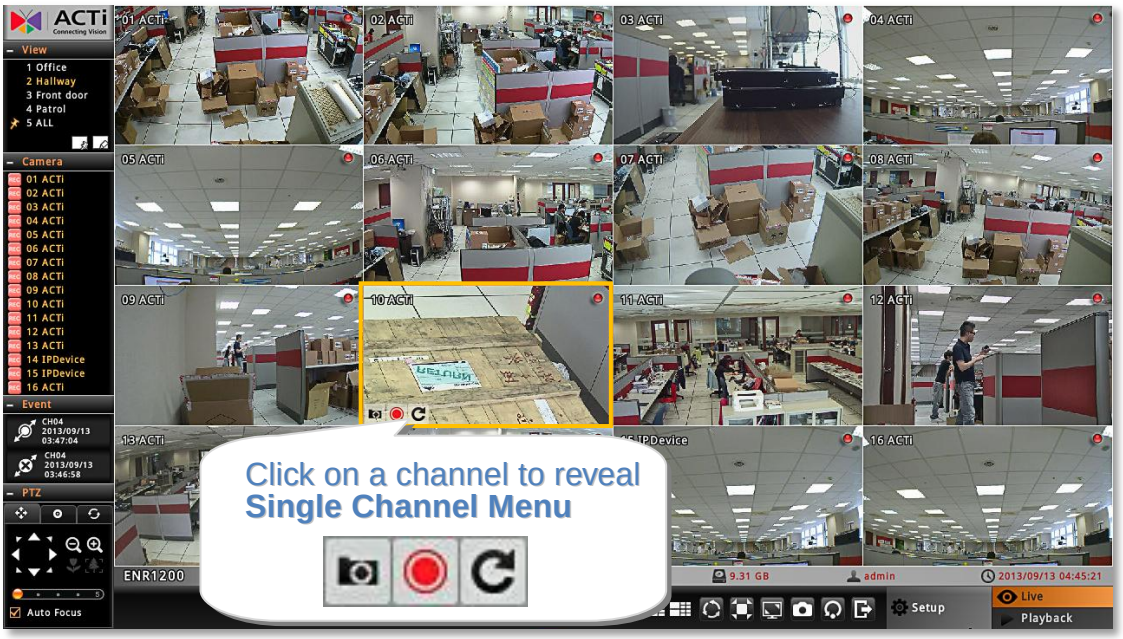


No	Description
View List	Lists **five** views available for customization.
Camera List	Lists all the connected cameras and their recording status.
Event List	Displays alerts of detected motion, recording and connection status.
PTZ Panel	Provides live onscreen PTZ controls. This panel is only enabled when a PTZ camera channel is selected on live view display area.
System Message	Displays import messages to inform you of certain system conditions that require your prompt action.
Status Bar	Displays the following system status from left to right – (1) connected USB storage device, (2) **LAN1** IP address, (3) **LAN2** IP address,(4) total free disk space, (5) your user account and (6) current system time.
Setup Menu	Click to open settings menu
Live Menu	Lists available layout selection and live view operation controls
Screen Switch	You may switch between **Live** and **Playback** screens by clicking these tags

Single Channel Operations

By selecting a specific channel on **Live** screen, you may perform functions below on a single channel view:

- Take a snapshot of this single channel
- Start manual recording of this single channel
- Enter Digital PTZ operation mode (for all cameras, in 1X1 layout)
- Enter Optical PTZ operation mode (for cameras with pan/tilt/zoom capabilities)



Take a Snapshot

The image (at original resolution size) of current channel will be saved as **jpg** format onto the USB mass storage, named as "**Channel**number_yyyy-MM-dd-hh-mm-ss.**jpg**". Please make sure the USB mass storage has already been connected to ENR device.

Start / Stop Manual Recording

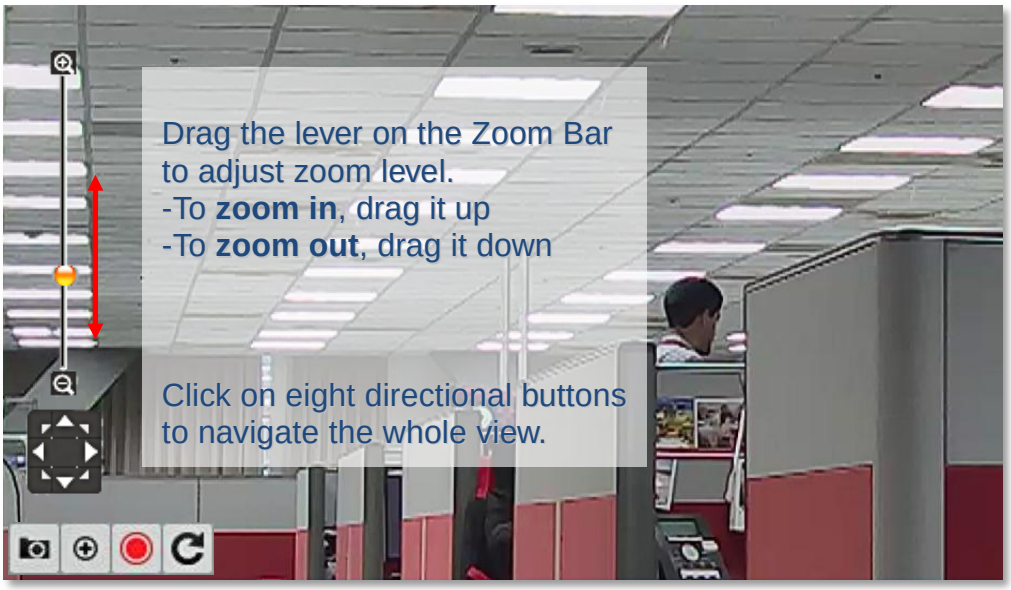
This function is useful when you need to record a specific video when no event recording or schedule recording is proceeding. This video will be displayed as normal scheduled recording on the **Playback** time bar. As the video is being recorded, this button will appear in pressed state , click on it again to stop manual recording.

Reconnect this camera

Digital PTZ Operations

Double-click a channel to display it in 1x1 layout, and then click on it again to reveal **Single Channel Menu**.

On **Single Channel Menu**, click to enable digital PTZ controls.

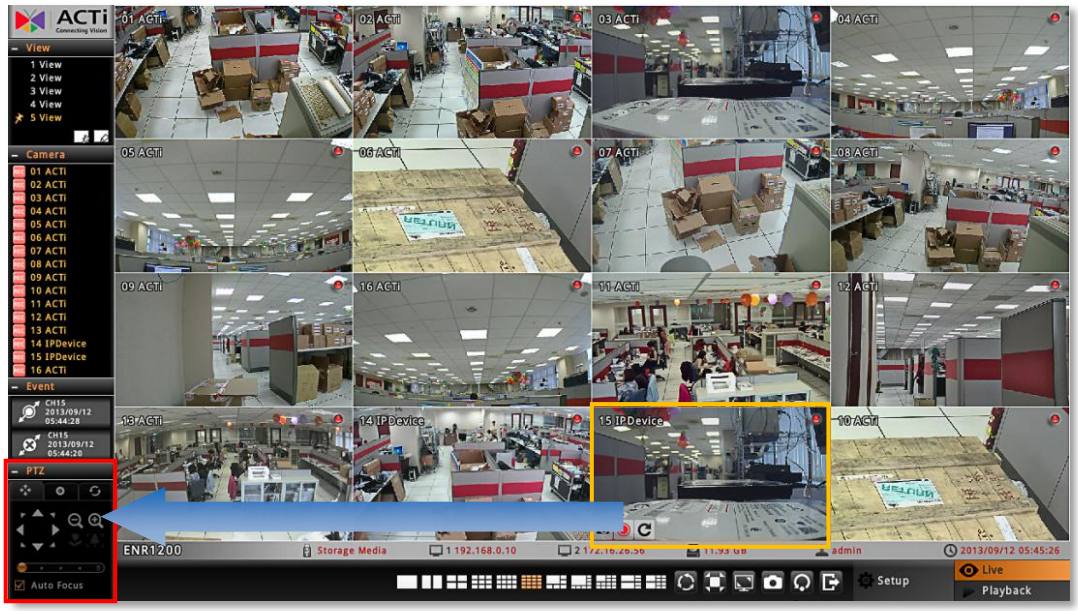


Note

To take a snapshot of a layout containing more channels, select the desired layout and click on **Live View** menu.

Optical PTZ Operations

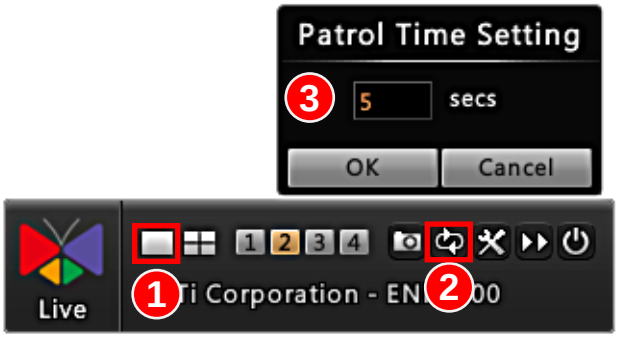
By selecting a camera with panning / tilting / zooming capabilities, all onscreen buttons on **PTZ Panel** will become enabled.



Layout Patrol

By performing the **Patrol** function, all the four channels can be displayed by **1x1** layout in turns.

1. On **Live View** menu, click to swtich to **1x1** layout.
2. Click
3. On **Patrol Time Setting** window, input the patrol interval (the maximum value is 999 seconds), and the click "**OK**".
4. To exit **Patrol** mode, click

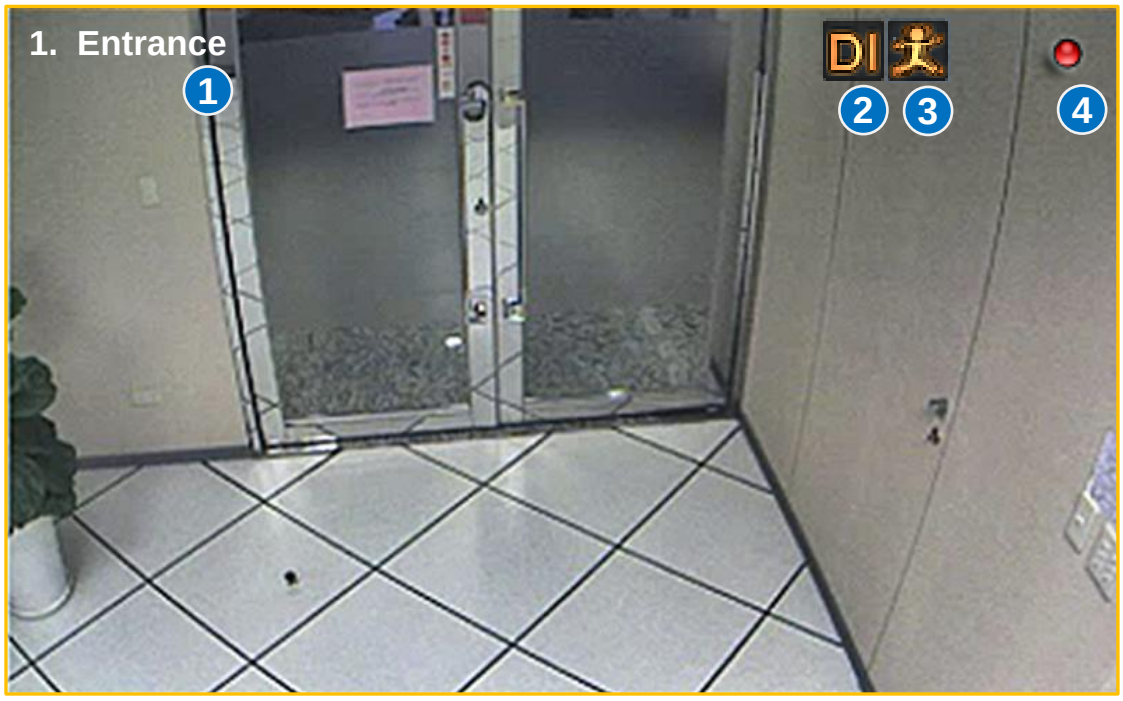


Acknowledge Channel Status

On **Live View** screen, it is essential to observe the system status events, since unexpected environmental factors or human behaviors may take place, and they might pose security threats to your site. The channel status icons display important camera status and motion alerts for you.

Channel Status

On top of each channel window displays certain status information of this device.



No	Description
1	**Camera Name**
2	**Digital Input Motion Alert** This will flash along with the channel outline border when the digital input device detects motion on camera site.
3	**Video Motion Alert** This will flash along with the channel outline border when the camera detects video motions on camera site.
4	**Recording Status** This will appear when ENR is recording this channel by schedule, event or user's manual control.

Playback

Playback is the service that processes recorded video clips. You may search by time. by event or the bookmarks you have set. **Playback** may include up to 4 channels synchronized playback. Video clips may also be exported in either RAW or AVI formats.

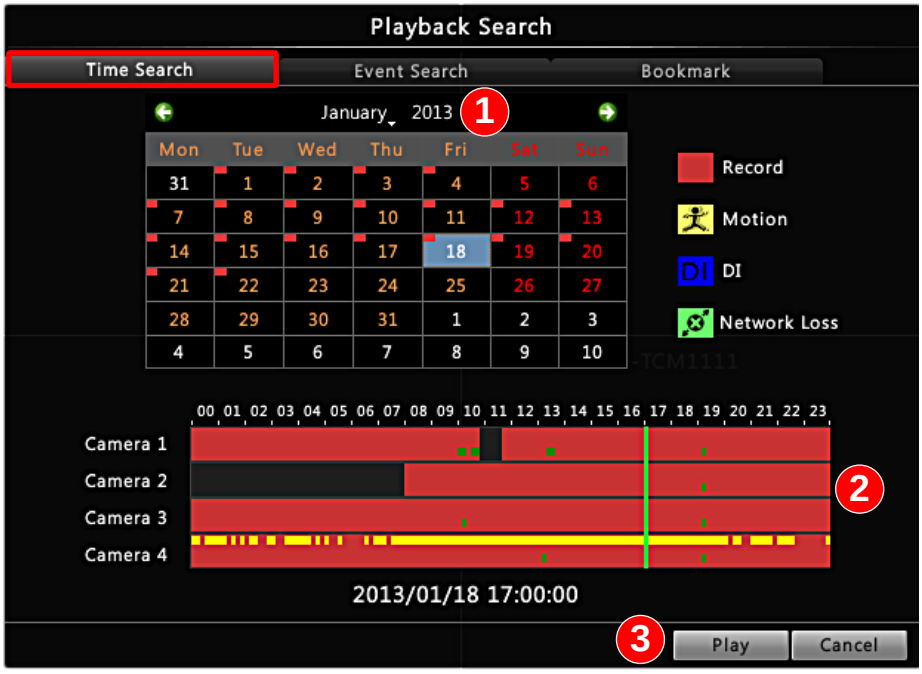
On **Live View** screen, click on **Live View** menu to enter **Playback** screen.

Search Video

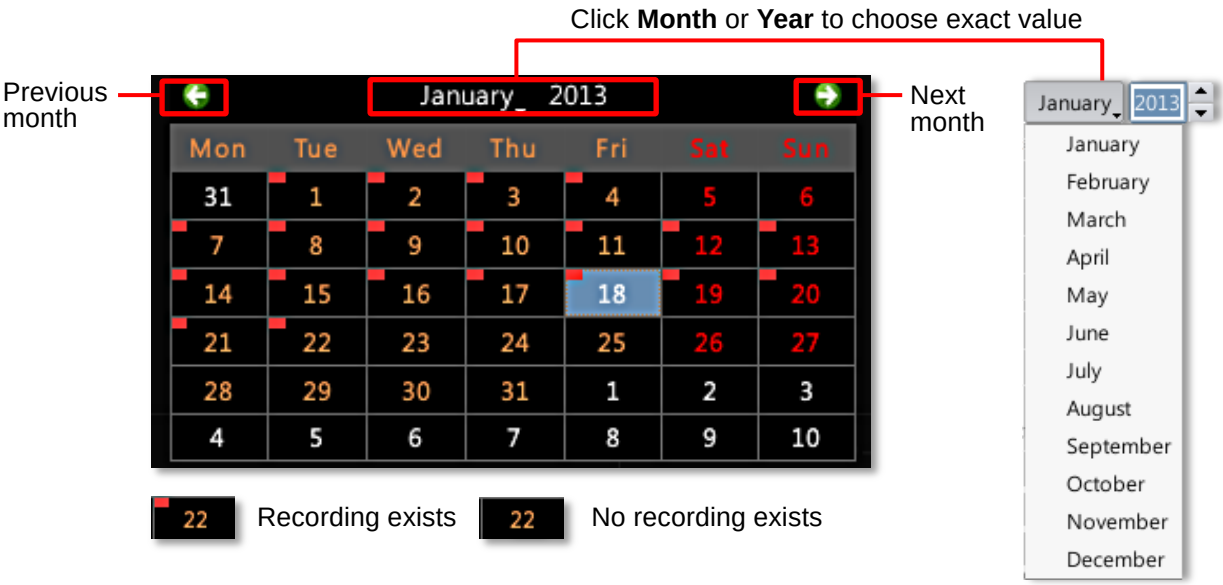
Upon entering **Playback** screen, you will have to choose a search method to start searching. On **Playback Search** window are three search methods: **Time Search**, **Event Search** and **Bookmark** search.

Time Search

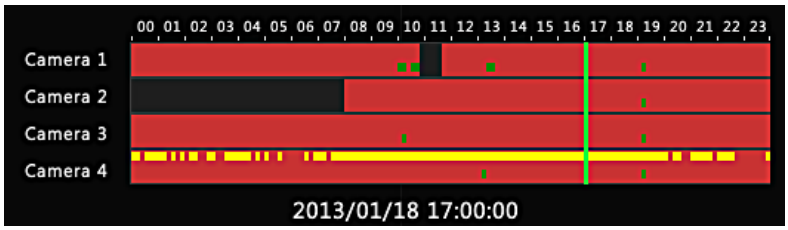
If you have known the specific time of the recording, you may start from choosing the precise, date and the hour.



1. Select **Time Search** tab, and specify the date. In the beginning, your current system time is selected.



2. As the date has been selected, choose the hour from the 24-hour time bar. The color represents the event type of the recording.

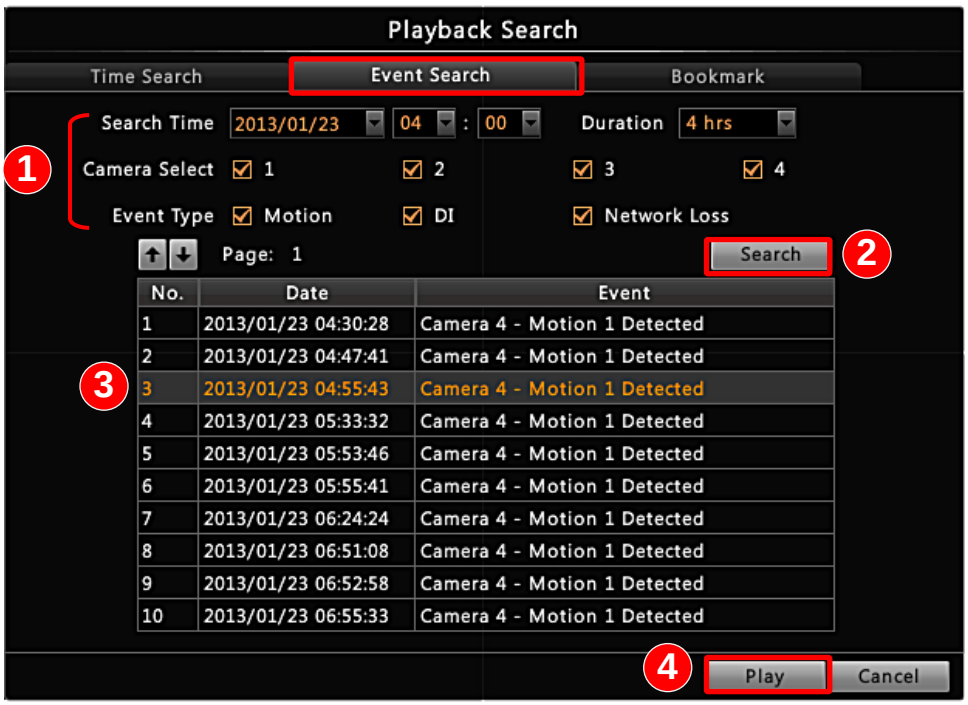


Color	Description
	Full-time or manual recording
	The camera's video motion detection function had been enabled, and the camera detected motion events during this period.
	The digital input device (e.g. PIR sensor) connected with the camera detected motion events during this period.
	ENR lost network connection with this camera during this period.

3. Click "**Play**" to start the playback.

Event Search

If you want to filter the recording by **Camera** or **Event Type**, you may perform an event search to locate the desired video clip.

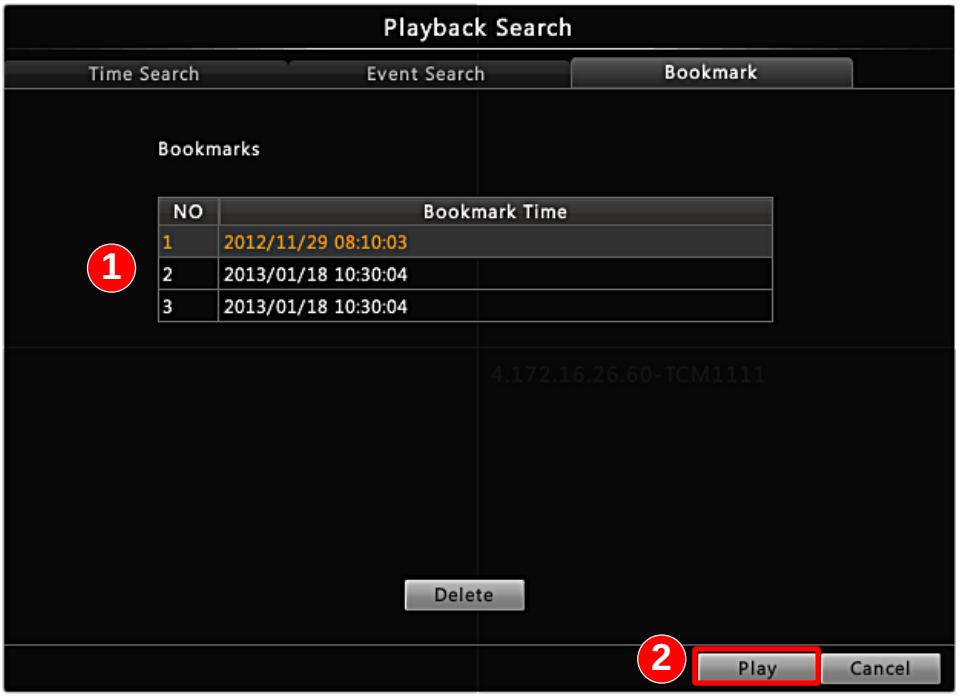


1. Select **Event Search** tab, and define the start time and a search duration (In the example below, ENR will search recording from **2013/01/23 04:00** to **08:00**.) the **Cameras** and **Event Type**.
2. Click "**Search**".
3. On search result list, select an entry.
4. Click "**Play**" to start the playback.

Bookmark Search

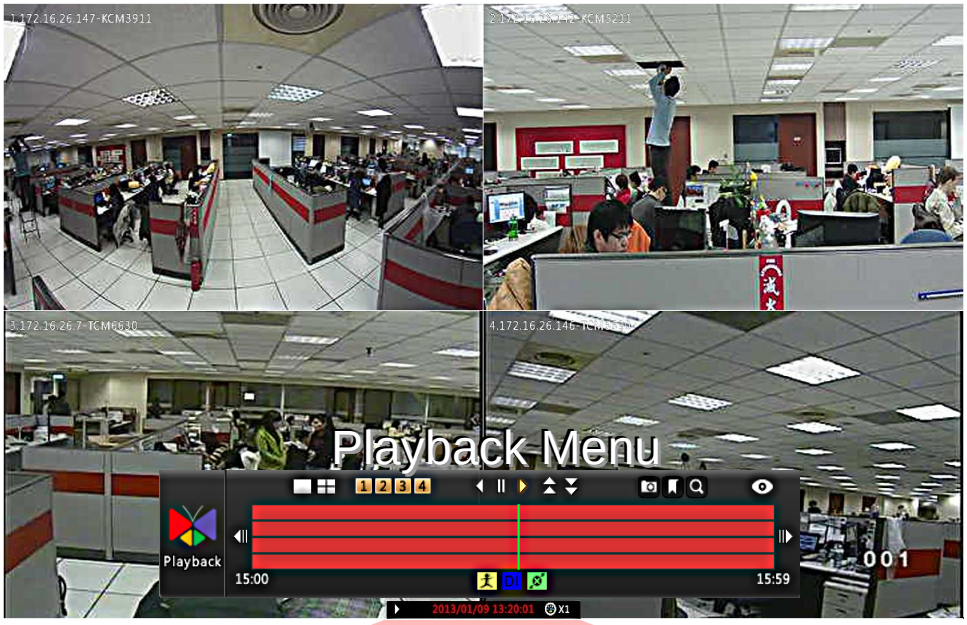
If you have previously set bookmarks on certain video time spot, these bookmarks are listed here. For instructions on how to set a bookmark on video, please refer to **Set Video Bookmark** on page 33.

1. Select **Bookmark** tab, on bookmarks list, click an entry.
2. Click "**Play**" to start the playback.



Playback Recordings

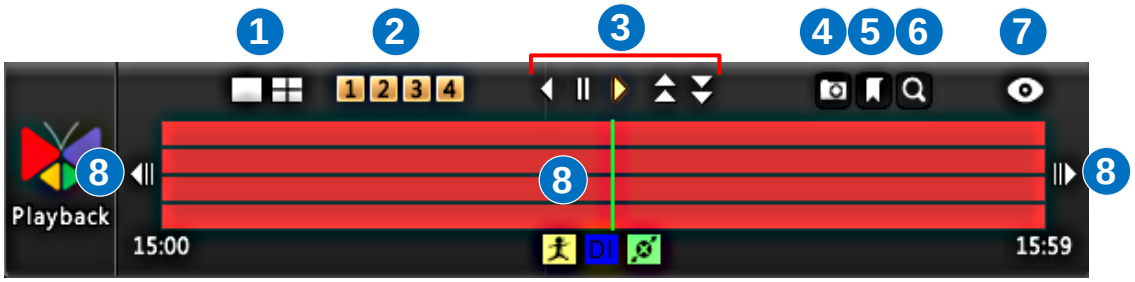
ENR will start playing back the video after you click "**Play**" on **Playback Search** window.



Current Playback Time **Current Play Speed**

Playback Menu

On **Playback** screen, right-click anywhere on screen to bring up the **Playback Menu**.



No	Description
1	**Layout Styles** Provided layout styles are **1x1** / **2x2** screen
2	**Single Channel Switch**
3	**Playback Controls** Reverse Play Pause Play Increase Play Speed Decrease Play Speed
4	**Take a Snapshot**
5	**Add Bookmark**
6	**Playback Search** window
7	**Live View** screen
8	**Next Hour** **Previous Hour**
9	**Time Bar** From top to bottottom display timebars of **Camera 1 ~ Camera 4**. The green indicator display current time position.

Video Playback Controls

When the video is playing, you may use the playback controls on **Playback** menu to find your interested spot.

Pause the playing

To pause the video playing, click . You may continue playing later by clicking .

Play the video

Click to play the video. During the playback, you will see the current time on bottom of the screen is moving forward.

Reverse playback

Click to play the video in reverse. During the playback, you will see the current playback time on bottom of the screen is moving backward.

Change play speed

Increase the play speed by clicking , and decrease the speed by clicking .
The provided speed rates are ½x, 1x, 2x, 4x, 8x, 16x and 32x. The current play speed will be shown on bottom of the screen .

Change Screen Layout

2x2 layout is used by default, once you srtart playingg back, all the four channels will be played synchronisedly.

To watch a single channel playback, click on **Playback** menu to swtich to **1x1** layout. By clicking the **Singe Channel Switch** , you may watch desitred channel in full screen.

If there is no recording of certain channel at the time position you select, the channel will appear blank while playback is proceeding.

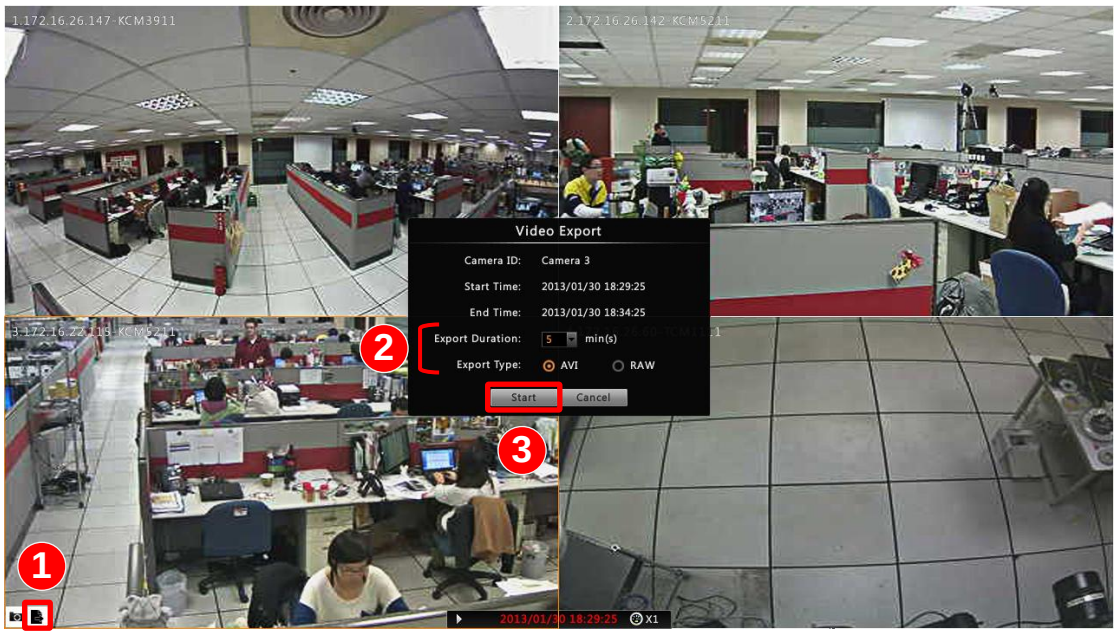
Take a Snapshot

On **Playback** menu, click ,the image of current screen will be saved as jpg format (at 720x480 resolution) onto the USB mass storage. Please make sure the USB mass storage has already been connected to ENR device.

If you want to get a snapshot of certain channel in its full resolution size, select the channel and click

Export Video

You may export video of the selected channel to **.avi** or **.raw** file. The provided exported video duration is from 1 minute ~ 30 minutes.



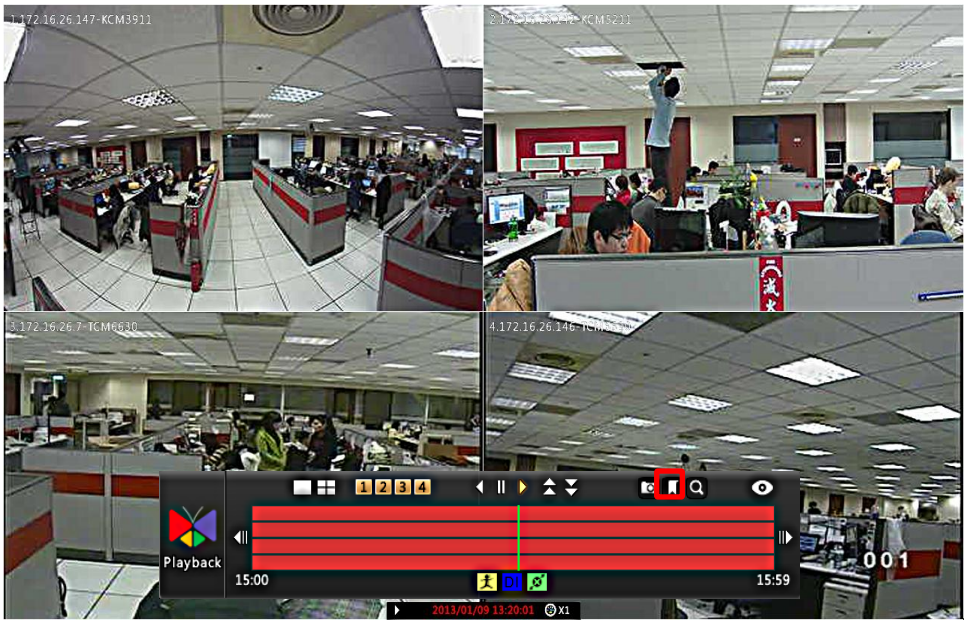
1. Select a channel and click
2. Select the **Export Duration** and **Export Type**.
3. Click "**Start**"

The exported video will be saved onto the USB mass storage. Please make sure the USB mass storage has already been connected to ENR device and the available storage space is enough.

Set Video Bookmark

When the video is playing, you can set a bookmark on current playback time for later quick retrieval.

To set a bookmark, make sure the green indicator is on your desired time position, and then click



You may view or delete the saved bookmarked video spots in **Bookmark** list. To enter **Bookmark** list, click on **Playback** menu, and select "**Bookmark**" tab on **Playback Search** window.

System Log

The activities performed by logged-in Users are recorded on server as **System Log**. With the access permission to **Setup** (for how to change the user group permissions, please refer to the **User Group** section in ENR1000_System_Administrator_Manual), a user may view, search and export this record for analysis or investigation.

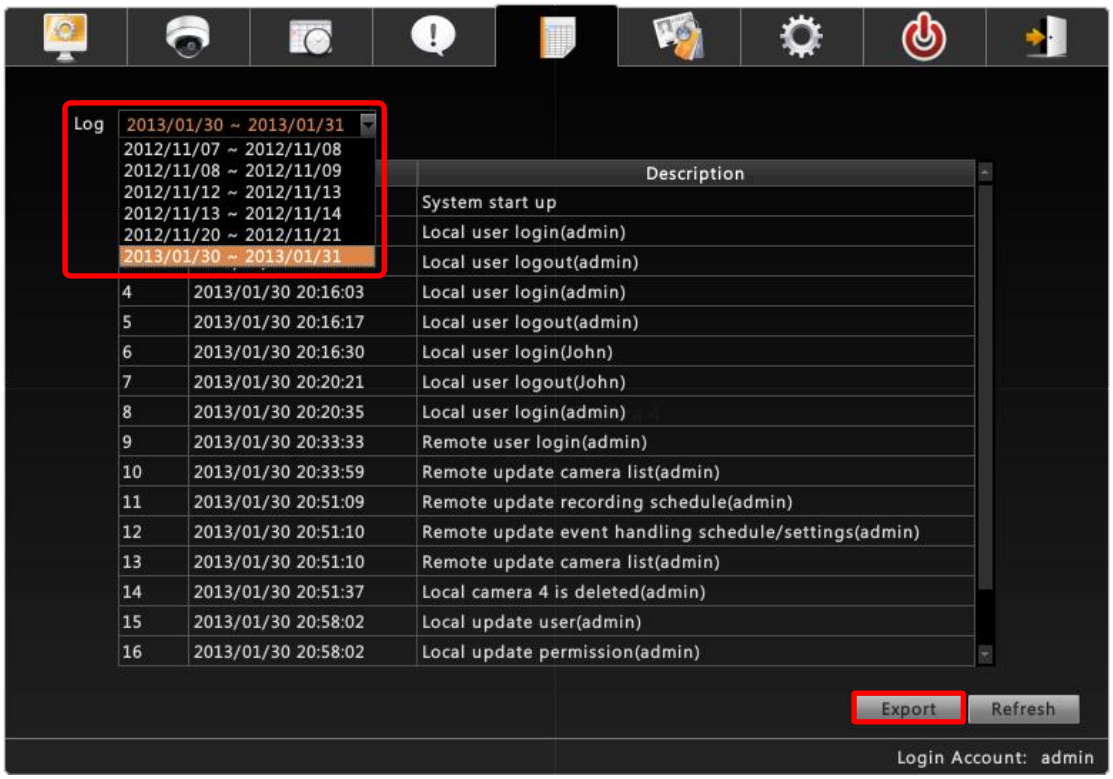
ENR keeps the system log of last 45 days on the storage disk. Both a local client user's and a remote client user's behaviors will be recorded

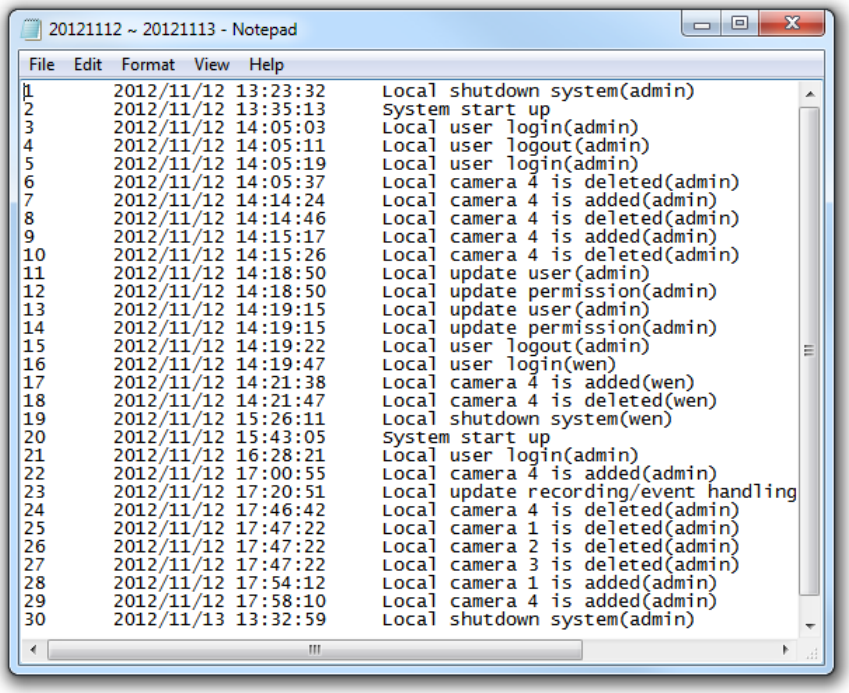
Client Type	Behaviors
Local	Login, Logout, Shutdown / Reboot the system
	Add / Delete cameras, Update camera configurations
	Update recording schedule
	Update User / Group permissions
	Upgrade the firmware
	Backup / Restore system configurations
	Update event handling list
	Format hard disks
	Update system time, e-mail server configurations, system information, network settings
Remote	Login, Logout, Reboot the system
	Update camera list / configurations
	Update recording schedule
	Update User / Group permissions
	Upgrade the firmware
	Backup / Restore system configurations
	Update event handling list
	Format hard disks
	Update system time, e-mail server configurations, system information, network settings, and workspace parameters

To enter **System Log**, please right-click on screen to bring up **Live View** menu →Select "**Setup Menu**" →click **System Log** tab.

Search Log

To search the log of certain time period, select the date from **Log** dropdown list, the result list will immediately be refreshed. Each log entry will display [time + client type + behavior + user name].For example, this entry shows that the **Local** user logged in as **Admin deleted Camera 4** at **2013/01/30 20:51:37**.



Export Log

You may export the system log of selected time period as .txt file onto the USB storage disk by clicking "**Export**".